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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,337	07/10/2003	Jennifer Samproni	036249-5006	5011
9629	7590	11/29/2006	EXAMINER	
MORGAN LEWIS & BOCKIUS LLP 1111 PENNSYLVANIA AVENUE NW WASHINGTON, DC 20004			NOGUEROLA, ALEXANDER STEPHAN	
			ART UNIT	PAPER NUMBER
			1753	

DATE MAILED: 11/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

✓

Office Action Summary

Application No.

10/617,337

Applicant(s)

SAMPRONI, JENNIFER

Examiner

ALEX NOGUEROLA

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11, 12 and 16-19 is/are rejected.
- 7) ☒ Claim(s) 10, 13-15, 20 and 21 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/27/2003</u> . | 6) <input checked="" type="checkbox"/> Other: <u>IDS of 12/23/2005</u> . |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-9, 11, 12, 16, 17, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over the English language Translation of Patent Application Public Disclosure No. 05-60724 provided by Applicant ("No. 05-60724") in view of Ghahramani et al. (US 6,340,741 B1) ("Ghahramani").

Addressing claim 1, No. 05-60724 discloses a chloride selective electrode membrane comprising a

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polymeric matrix wherein the matrix comprises:

an epoxy resin; and

a polyamide as an amine agent. See claim 1 and paragraph [0006] of No. 05-60724.

No. 05-60724 does not mention providing the agent in stoichiometric excess. However, No. 05-60724 does teach that varying the ratio of polythiol epoxy resin to polyamide epoxy resin in the polymeric matrix will alter the ion selectivity. In particular, a larger presence of polyamide epoxy resin than polythiol epoxy resin will make the polymeric matrix less susceptible to interference from hydrophilic ions. A larger presence of polythiol epoxy resin than polyamide epoxy resin will make the polymeric matrix less susceptible to interference from lipophilic ions. See paragraphs [0012] to [0014]. Thus, providing a much larger relative amount of polyamide epoxy resin to polythiol epoxy resin and thus a stoichiometric excess of agent is just a matter of optimizing the polymeric matrix to be selective against lipophilic ions.

Alternatively, It would have been obvious to one with ordinary skill in the art at the time of a stoichiometric excess of agent because as taught by Ghahramani, which discloses a membrane for use in chloride-sensitive electrodes, the membrane comprising an epoxy resin with an amino curing agent, this will result in a high degree of selectivity. See the abstract; col. 03:23-30 and col. 04:61-67 in Ghahramani.

Addressing claim 2, for the additional limitation of this claim see in No. 05-60724 claim 1 and paragraph [0006].

Addressing claims 3-9, the additional limitations of these claims are product-by-process limitations. Although particular ingredients are specified, it is not clear how the product is limited to a subset of polyamides as the reaction steps are not also specified. Thus, claims 3-9 do not appear to further limit 2 from which they depend directly or indirectly.

Addressing claim 11, the additional limitation of this claim is a product-by-process limitation. Although particular ingredients are specified, it is not clear how the epoxy resin is further limited as the reaction steps are not also specified.

Addressing claims 12 and 19, as stated in the rejection of claim 1 the amount of amine agent is just a matter of optimizing the ratio of polythiol epoxy resin to polyamide epoxy in the polymeric resin, that is, the desired selectivity to hydrophilic ions versus lipophilic ions. Alternatively, note that Ghahramani discloses an upper limit of 150% amine agent, which is a shared end point with the claimed "at least 150%".

Addressing claim 16, No. 05-60724 discloses a chloride selective electrode comprising a chloride selective electrode membrane comprising a polymeric matrix wherein the matrix comprises:

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an epoxy resin; and

a polyamide as an amine agent. See claim 1 and paragraph [0006] of No. 05-60724.

No. 05-60724 does not mention providing the agent in stoichiometric excess. However, No. 05-60724 does teach that varying the ratio of polythiol epoxy resin to polyamide epoxy resin in the polymeric matrix will alter the ion selectivity. In particular, a larger presence of polyamide epoxy resin than polythiol epoxy resin will make the polymeric matrix less susceptible to interference from hydrophilic ions. A larger presence of polythiol epoxy resin than polyamide epoxy resin will make the polymeric matrix less susceptible to interference from lipophilic ions. See paragraphs [0012] to [0014]. Thus, providing a much larger relative amount of polyamide epoxy resin to polythiol epoxy resin and thus a stoichiometric excess of agent is just a matter of optimizing the polymeric matrix to be selective against lipophilic ions.

Alternatively, It would have been obvious to one with ordinary skill in the art at the time of a stoichiometric excess of agent because as taught by Ghahramani, which discloses a membrane for use in chloride-sensitive electrodes, the membrane comprising an epoxy resin with an amino curing agent, this will result in a high degree of selectivity. See the abstract; col. 03:23-30 and col. 04:61-67 in Ghahramani.

Addressing claim 17, the additional limitation of this claim is met by paragraph [0032] of No. 05-60724, which discloses determining the chloride ion concentration at which the potential difference deviates.

4. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Craig et al. (US 6,015,480) ("Craig") in view of the English language Translation of Patent Application Public Disclosure No. 05-60724 provided by Applicant ("No. 05-60724").

Craig discloses a sensor assembly for deterring chloride ion in a test liquid, comprising:

an electrically insulated substrate (12) having a surface with a reference electrode (10R) formed thereon (Figure 3), whereon the chloride selective electrode comprises

a chloride selective electrode membrane comprising a polymeric matrix (col. 08:47-56);

means positioned on the surface of the substrate defining a reference flow channel ((34R) – col. 06:05-7) and a sensor flow channel ((34M) – col. 06:08-09);

the reference flow channel having means for passing reference liquids over the reference electrode (col. 06:19-22);

the sensor flow channel having means for passing test liquid over the sensor electrode (col. 06:19-22); and the reference and sensor flow channels defining a common outlet for removing liquids from the assembly (col. 05:40-42).

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Craig does not mention whether the polymer matrix comprises

an epoxy resin; and

an amine selected from the group consisting of polyamide, amidoamines and mixtures thereof, wherein the amine is present in stoichiometric excess.

No. 05-60724 discloses a chloride selective electrode membrane comprising a polymeric matrix wherein the matrix comprises:

an epoxy resin; and

a polyamide as an amine agent. See claim 1 and paragraph [0006] of No. 05-60724.

It would have been obvious to one with ordinary skill in the art at the time of the invention to use the chloride selective membrane of No. 05-60724 in the invention of Craig because as taught by No. 05-60724 the susceptibility of the sensor to interference from lipophilic ions and hydrophilic ions can be adjusted as desired (paragraphs [0012]-[0014]) and as taught by Craig, "A variety of ion selective membrane paste composition may be used to form the conventional sensor membrane layer 16 ..." (col. 03:52-54).

No. 05-60724 does not mention providing the agent in stoichiometric excess. However, No. 05-60724 does teach that varying the ratio of polythiol epoxy resin to polyamide epoxy resin in the polymeric matrix will alter the ion selectivity. In particular, a larger presence of polyamide epoxy resin than polythiol epoxy resin will make the polymeric matrix less susceptible to interference from hydrophilic ions. A larger presence of polythiol epoxy resin than polyamide epoxy resin will make the polymeric matrix less susceptible to interference from lipophilic ions. See paragraphs [0012] to

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[0014]. Thus, providing a much larger relative amount of polyamide epoxy resin to polythiol epoxy resin and thus a stoichiometric excess of agent is just a matter of optimizing the polymeric matrix to be selective against lipophilic ions.

Alternatively, It would have been obvious to one with ordinary skill in the art at the time of a stoichiometric excess of agent because as taught by Ghahramani, which discloses a membrane for use in chloride-sensitive electrodes, the membrane comprising an epoxy resin with an amino curing agent, this will result in a high degree of selectivity. See the abstract; col. 03:23-30 and col. 04:61-67 in Ghahramani.

Allowable Subject Matter

5. Claims 10, 13-15, 20, and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter:

a) Claim 10: the combination of limitations requires the polymer matrix to further comprise an adhesion promoter selected from the group consisting of clays, silica, silicates, and mixtures thereof. Neither No. 05-60724 nor Ghahramani discloses including any of these substances in the polymer matrix. The Written Opinion for PCT/DK2004/000496 merely states, "the use of an adhesion promoter does not seem inventive." Note that claim 9 in PCT/DK2004/000496 corresponds to claim 10 in the instant application.

b) Claim 13: the combination of limitations requires the amine agent to be an amidoamine. No. 05-60724 only recites polyamide and Ghahramani just recites using "amino compound as a curing agent." Note that claim 13 in the instant application does not correspond to any of claims 1-15 in Application PCT/DK2004/000496 (WO 2005/005975 A1).

c) Claims 14 and 15 depend from allowable claim 13.

d) Claims 20 and 21: each of the combination of limitations requires the step of "heating the substrate containing dispensed chloride selective material to obtain chloride selective membrane." In No. 05-60724 all heating is performed before the material contacts the substrate. The material is cooled before it is adhered to the substrate. See paragraph [0025]. It would not have been obvious to heat the substrate as claimed because membrane must be formed a flat substrate first

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since the electrode cell substrate has an opening over which the membrane is to be placed. See Figure 1.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEX NOGUEROLA whose telephone number is (571) 272-1343. The examiner can normally be reached on M-F 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, NAM NGUYEN can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Alex Noguerola
Primary Examiner
AU 1753

November 25, 2006